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INAUGURAL DISSERTATION

ON

HEPATITIS,

SUBMITTED TO
THE MEDICAL FACULTY
OF THE
University of Edinburgh,
IN CONFORMITY WITH THE RULES FOR GRADUATION,

BY AUTHORITY OF THE
VERY REV. PRINCIPAL BAIRD,
AND WITH THE SANCTION OF
THE SENATUS ACADEMICUS,

BY
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Of Montrose,
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TO THE

REVEREND ANDREW FERGUSSON,

MINISTER OF MARYTOWN,

TO WHOM,

BOUND NOT ONLY BY THE STRONG TIES OF NATURE,

BUT BY EVERY FEELING OF THE MOST GRATEFUL AFFECTION

AND ESTEEM,

THE FOLLOWING ESSAY

IS DEDICATED BY HIS DUTIFUL SON,

THE AUTHOR.

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TO

WILLIAM BRUCE, Esq., Arbroath,

THIS ESSAY IS INSCRIBED

AS A SLIGHT MARK OF ESTEEM FOR HIS WORTH,

AND GRATITUDE FOR HIS KINDNESS,

BY HIS AFFECTIONATE NEPHEW,

THE AUTHOR.

TO THE

REVEREND JOHN BRUCE,

MINISTER OF NEW NORTH CHURCH, EDINBURGH,

WHO HAS ALWAYS TAKEN A WARM INTEREST IN THE

AUTHOR'S WELFARE,

AND TO WHOM HE IS INDEBTED FOR MANY ACTS

OF KINDNESS AND ATTENTION,

THE FOLLOWING PAGES ARE DEDICATED,

WITH EVERY SENTIMENT OF AFFECTIONATE ESTEEM AND

REGARD,

BY HIS ATTACHED FRIEND AND COUSIN,

ANDREW FERGUSSON, M.D.

TO

JAMES SYME, Esq.

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF
EDINBURGH,

THE FOLLOWING ESSAY IS INSCRIBED,

AS A SMALL BUT SINCERE TRIBUTE OF GRATEFUL RESPECT,

BY HIS OBLIGED FRIEND AND FORMER PUPIL,

THE AUTHOR.

TO

DAVID NIDDRIE, Esq. Surgeon,

MONTROSE,

THE FOLLOWING THESIS IS DEDICATED,

AS A SMALL ACKNOWLEDGEMENT
OF THE FORMER KINDNESS AND INSTRUCTION
RECEIVED BY HIS GRATEFUL AND OBLIGED FRIEND,

THE AUTHOR.

INAUGURAL DISSERTATION

ON

HEPATITIS.

Inflammation of the Liver seems to have been well known in the earlier periods of the history of medicine, as it is very accurately described in the works of Hippocrates, Celsus, and Aretaeus. The history, however, delivered by them of this affection, and the treatment, relate solely to that form of Hepatitis which is observed within the range of the temperate zone; a circle of the area of the globe where Hepatitis is by no means very prevalent.

From the moderns it has received more attention, principally on account of the very great prevalence of the disease in the East and West Indies, and other colonies situated between the tropics, and accordingly its history, symptoms, causes, various terminations, and remedies, have been very completely and satisfactorily investigated. To consider these briefly, is the object of the present essay, which, it is scarcely necessary to subjoin, is written solely in compliance with the rules of the Medical Faculty of this University; not with the hope that I can enlarge on any of these points beyond what has been already done by various experienced practitioners.

Before we proceed to the history of the inflammation, it may not be altogether irrelevant if we give a summary view of the position, structure, and function of the liver.

This gland is the largest in the body, it is situated in the upper part of the abdominal cavity, principally in the right side and epigastric region, immediately beneath the diaphragm, to which it is attached by various ligaments. It belongs to the class of glands called conglomerate, is intended for the secretion of the bile, and seems to be present in all animals which possess a heart and blood-vessels. Indeed the almost universal presence of this viscus in different classes of animals, and the very great size which it attains, in addition to the very dangerous consequences resulting from the different diseases to which it is liable, distinctly shew that it serves some highly important function in the economy of animal organization.

It is supplied very largely with blood-vessels, and presents the peculiar anomaly of a large proportion of venous blood, returning from other viscera, circulating through its substance previous to entering the vena cava ascendens. In uterine life the size is in the inverse ratio of the age; at that period it is likewise proportionally much larger than in the adult, and is further supplied by a much greater amount of blood, nearly four-fifths of the blood from the umblical vein circulating through it, by the ramus communicans inosculating with the vena portae, before it is expended in the nourishment of the fœtus.

The colour of the liver is too well known to require any description; its substance possesses considerable density, and consists of a congeries of blood-vessels, ducts, nerves, and lymphatics. Two distinct sets of blood-vessels supply it with blood; the hepatic artery, a branch of the coeliac axis, conveying red blood, and ramifying by numerous small branches through the tissue of the gland; the other, or vena portae as it is usually named, formed by the junction of the principal veins returning from the chylopoietic viscera, subdivides likewise into numerous minute branches, but differs from the former in conveying venous blood. As in other parts of the body, the blood is returned from the extreme ramifications of these vessels into the venae cavae hepaticae, which pour their contents into the vena cava ascendens.

Attached to the liver is a considerable receptacle or bladder, containing the bile, the secretion peculiar to this viscus. This gall-bladder is not possessed by all animals, as for instance the horse, elephant, &c. In the class mammalia, all those animals which possess it are carnivorous, while those that are not provided with it are granivorous, except the porpoise and dolphin. Almost the whole class of reptiles, which are generally carnivorous, possess a gall-bladder.

On the minute structure of the liver, which has been so completely illustrated by Mr. Kiernian, it would be altogether out of place here to make any remarks. On the function, however, of this organ, we shall make a few observations.

The use of the bile, according to almost all physiologists, is considered to be intimately connected with the function of digestion. The origin of the bile from venous blood is now generally admitted; and without entering into the inquiry how far such a production from venous blood is analogous to the usual source whence secreted substances are usually procured, we may remark that the analogies drawn from comparative anatomy support strongly the commonly received doctrine of the origin of the bile.

That the bile is essential to digestion was conceived to be established by the experiments of Sir Benjamin Brodie. He found that when a ligature was tied on the common biliary duct in young animals, the food taken was as usual converted into proper chyme, but that no chyle could be detected in the intestines or lacteals, for they only contained a transparent fluid, supposed to be lymph, and the watery portion of the chyme. The same view of the function of the bile was supported by observations made by Mr. Mayo.

In opposition to these experiments, it had been long before stated by Dr. Fordyce, that when the ductus communis choledochus was tied or closed by a calculus, so that the flow of bile into the duodenum was completely arrested, chylification was not necessarily arrested. It is also now satisfactorily established, in consequence of the very precise and numerous experiments of Tiedemann Gmelin, Leuret, and Lassaigne, that chyle is formed even though the passage of the bile into the duodenum be completely prevented, as they detected all the usual elements of that fluid in experiments made on animals, where it was altogether impossible that the bile could have mixed with the chyme in the duodenum. Mr. Brodie, they conceived, was led into error by the absence of the usual white colour of the chyle, in consequence of the want of the bile.

By these celebrated experimental physiologists it is concluded that the bile is subservient to different purposes; first, That it excites the flow of intestinal fluids; secondly, That it possibly contributes to azotize these elements in the food which contain no nitrogen; thirdly, That it renders soluble the fatty part of the food; and, fourthly, besides other secondary purposes, that it constitutes an important excretion.

" The arguments by which they endeavour to support this opinion, and more particularly to prove that the secretion of bile is supplementary to the function of the lungs, are ingenious if not conclusive. They first shew, from the relative size of the vena portae and hepatic ducts, from the more intimate connexion of the biliary capillaries with those of the vena portae, than with those of the hepatic artery; and, finally, from the experiments of Malpighi, recently confirmed by those of Simon, that the bile is a secretion from venous, not from arterial blood. They next prove that a great number of the principles of the bile, such as its resin, colouring matter, fatty matter, mucus, and salts, are thrown out of the body with the faeces, in the natural state of the biliary system, or by the urine, and into the cellular tissue, when the excretory duct of the liver is obstructed. These principles all contain a large proportion of carbon, and would appear, therefore, to be intended to carry off the excess of that element which is introduced into the system with the vegetable part of the food, and which is not thrown off by the lungs. In the lungs it is thrown off in a state of oxidation; in the liver it is thrown off chiefly in union with hydrogen, as in the form of resin and fatty matter. That the bile is thus intended to assist the lungs in decarbonizing the blood, appears, they conceive, from the following facts: The resin of the bile abounds most in herbivorous animals, whose food contains a great disproportion of carbon and hydrogen. But what is of more importance, the pulmonary and biliary organs are, in different tribes of animals, nay even in different individuals of the same species, in a state of antagonism to one another. The size of the liver and the quantity of the bile are not proportionate to the quantity of food and frequency of eating, but inversely proportional to the size and perfection of the lungs. Thus, in those warm-blooded animals which have large lungs, and live always in the air, the liver, compared with the body, is proportionally less than in those which live partly in water. The liver is proportionally still larger in reptiles which have lungs with large cells incapable of rapidly decarbonizing the blood, and in fishes, which decarbonize the blood but slowly by the gills, and above all in molluscous animals, which effect the same change very slowly either by gills or by small imperfectly developed lungs. It is also worthy of remark, that the quantity of venous blood sent through the liver increases as the pulmonary system becomes less perfect. In the mammalia, and in birds, the vena portae is formed by the veins of the stomach, intestines, spleen, and pancreas; in the tortoise it receives also the veins of the hind legs, pelvis, tail, and the vena azygos; in serpents it receives the right renal and all the intercostal veins; in fishes it receives the renal veins and those of the tail and genital organs. Farther, during the hybernation of certain animals of the class mammalia, when the respiration is suspended, and no food is taken, the secretion of bile goes on. Another argument is drawn from the physiology of the foetus, in which the liver is a great deal larger than in the adult, and in which the bile is secreted abundantly, as appears from the great increase of the meconium during the latter months of utero-gestation. The last argument is drawn from pathological facts. In pneumonia and phthisis the secretion of the bile, according to their observation, is increased; in diseases of the heart the liver is enlarged; and in the morbus caeruleus the liver retains its foetal state of disproportion. In hot climates, too, where, in consequence of the greater rarefaction of the air, respiration is less perfectly carried on than in colder climates, a vicarious decarbonization is established by an increased flow of the bile."

The view of the function of the liver in relation to that of the lungs, just now related, necessarily increases the importance attached to the history of Hepatitis even in our cold climate;

in which, though it is rather a rare affection, nevertheless diseases of the lungs carry off nearly one hundred thousand of the population of the British isles annually.

According to the celebrated Cullen, this disease assumes two forms, the Acute and Chronic, the former of which he defines in the following words :—

Pyrexia ; hypochondrii dextri tensio et dolor, saepe pungens, pleuritici instar, saepius obtusus ; dolor ad claviculam et summum humeri dextri ; decubitus in sinistrum latus difficilis ; dyspnœa ; tussis sicca ; vomitus ; singultus.

SYMPTOMS OF ACUTE HEPATITIS.

Chills, languor and anxiety, often very slight, precede inflammation of the liver ; increased heat, strong, hard, and frequent pulse, in a short time supervene. These symptoms continue for an uncertain period, and are finally succeeded by those peculiar to hepatitis, namely, pain in the right hypochondrium, sometimes obtuse, at other times acute, ascending to the clavicle, and to the top of the right shoulder, sometimes continued as far as the right side, arm, and even the fingers. In some cases there is great difficulty of breathing, cough, great restlessness, watchfulness, delirium, singultus, and burning pain which the patient refers to the chest.

In other examples, when the concave part of the liver next to the stomach and intestines is affected with the disease, the patient is seized with nausea and vomiting ; and sometimes the functions of the stomach are so much deranged, that constant vomiting of bilious matter greatly afflicts the patient. The pain of the right hypochondrium is often increased by pressure or motion ; and the patient labouring under this disease, with difficulty bears lying down on the left side. The fever is sometimes severe, at other times, slight ; the skin, at first dry, in a few days is affected with a certain yellowness, which is first wont to manifest itself on the tunica conjunctiva of the eye. The mouth and fauces are dry, tongue whitish, and often covered with a yellow fur ; thirst is often intense ; the appetite for food is diminished; urine is scanty, bilious, and thick, depositing a copious sediment. The bowels at first are constipated, but towards the end of the disease, diarrhœa succeeds.

Lastly, we may remark, that the symptoms of Acute Hepatitis in warm countries, are often so very obscure, as to have deceived medical men of the longest experience; for in many examples, extensive hepatic abcesses have been found, after death, without any symptom whatever previously indicating an affection of the liver.

CHRONIC HEPATITIS.

Cullen thus defines it:—Hæc saepe nulla, quibus dignoscatur, signa præbet; aliquando tamen eandem adesse suspicari potest, ex hepatitidis causis quibusdam progressis, ex sensu quodam plenitudinis et gravitatis in hypochondrio dextro, ex doloribus plus minusve pungentibus in eadem parte subinde perceptis, ex dolore quodam a presso hypochondrio dextro, vel a decubitu in latus sinistrum sentito, et denique ex pyrexia leviori cum dictis signis subinde infestante.

SYMPTOMS OF CHRONIC HEPATITIS.

Even from the commencement, Chronic Hepatitis is accompanied with languor, lassitude, emaciation of the body, and loss of strength. The countenance from yellow becomes pale, squallid and collapsed, assuming an appearance which can scarcely be described in words. In some cases there is no desire for food; in others, the patient eats voraciously, and complains of pain and acidity in the stomach, which symptoms are often greatly relieved by eructation ; moreover nausea, vomiting, pain of the head, constipated bowels, and many other symptoms of dyspepsia, manifest themselves. We may further remark, that the disease of which we are speaking often makes its approach in such an insidious manner, that it eludes the notice of the most experienced physician, so that, before he is aware of its nature, it has made such progress as to be entirely incurable. But there are other symptoms which may lead us to suspect the latent disease ; such as pain in the right hypochondrium, stretching towards the shoulder, with impeded respiration ; the increased size of the liver, and its unusual hardness when explored by the touch ; and pains increased by exercise, especially after a full meal, by pressure, and lying on the left side ; skin dry, at length manifestly yellow ; eyes yellowish, languid and dull ; tongue often sordid and yellowish. During the night, the patient is harassed with dry cough, and is for the most part awake ; also wandering pains in the chest, singultus and delirium. Finally, in this form of hepatitis, not only are the animal functions greatly deranged, but the action of the heart and arteries morbidly increased, the respiratory organs unable for their functions, and also all the secretions and excretions so diminished, that unless medicine bring relief, death speedily follows.

THE TERMINATIONS.

Hepatitis may terminate in Resolution, Suppuration, Gangrene, or Scirrhus.

Of these, resolution is by far the most desirable, which the medical practitioner not only in this, but also in every other disease, should use his utmost endeavours to obtain. Certain remarkable evacuations are almost always observed to precede this termination; such as spontaneous hæmorrhage from the nose or hæmorrhoidal veins, copious sweats, a great secretion of bile into the intestines inducing diarrhœa, and of urine depositing a copious sediment. Increased sputa from the lungs have been observed to accompany the resolution of this inflammation. When these evacuations are inducing a favourable crisis of the disease, the other symptoms by degrees become milder; the fever remits; the countenance assumes the healthy appearance; the patient eagerly desires his food, and without uneasiness digests it; and so is gradually restored to health. When this disease terminates in suppuration, pain is diminished, and a sense of weight is perceived in the right hypochondrium. In some examples, fluctuation of the tumour, by the hand being applied to the seat of the disease, is able to be perceived. Soon after that has taken place, nocturnal sweats, and all the symptoms of confirmed hectic fever, with colliquative diarrhœa, quickly consume the remaining strength of the patient.

The pus formed in the liver may make its exit in very different ways. If an abscess is formed in the convex part of the liver, it may easily be let out with a lancet, and the patient recovers. Or if the inflammation extend to the diaphragm, it may pass into the lungs, and the purulent matter of the abscess may be thus expectorated. Sometimes it escapes into the cavity of the peritoneum, and is speedily followed by a fatal Peritonitis. Lastly, when the abscess has its seat in the concave superficies next the intestines, and adhesions are established between it and the stomach or the intestines, the pus is either expelled by vomiting, or dejected along with the faeces.

The inflammation of this viscus very seldom indeed is found to pass into gangrene; yet medical authors make mention of some examples. Among others, Dr. Saunders says, " I have seen some cases, where the pain and inflammation have subsided very suddenly, and have been succeeded by a low fluttering pulse, cold extremities, deliquium, and death; so that there is reason to suspect, that this organ may, on some occasions, though much less frequently than others, become gangrenous."

When this inflammation is not entirely removed, but by the use of antiphlogistic remedies is prevented from ending in suppuration, there is a danger of its assuming the scirrhous form, which sometimes happens in the acute, but most frequently in the chronic species. For in the chronic form of hepatitis the liver often acquires an enlarged scirrhous appearance, without the evident symptoms of acute inflammatory action.

CAUSES.

Hepatitis, acute and chronic, are known to invade every country of the world. Their attacks, however, are less frequent in the cold than in the warm regions. No age, or sex, nor constitution of the body, can claim a complete immunity; notwithstanding its attacks are less frequent in infancy than manhood, in the female than the male, in the weakly than the robust constitution. Moreover, there are peculiar temperaments of the body; for example, the melancholic, especially if to it is added a sedentary mode of life, which peculiarly predispose to this disease.

Among the exciting causes are reckoned the great heat of tropical regions; excessive exercise, or long marches under the burning rays of the sun; violent affections of the mind, especially anger; cold applied to the body, when its whole superficies is covered with perspiration; all of which peculiarly excite the disease, not only in increasing preternaturally the secretion of bile, but in completely disturbing the function of the liver. To these we may add the abuse of spirituous liquors, and luxury and intemperance in eating high-seasoned food, which are most powerful agents in disturbing the function of the liver. For it is well known in the East Indies, that the Europeans are more frequently attacked by this disease than the natives. The reason is plain, the natives religiously abstain from the use of animal food; nor do they indulge in spirituous liquors, but use a slender diet, consisting entirely of vegetables. This abstemiousness saves them from the punishment which the Europeans suffer. Dr. Gregory, late professor of the practice of physic, in his lectures, made mention of some Englishmen living in the East Indies, who, by their intemperance in eating and drinking, had been attacked with Hepatitis. During the war between the British and Hyder Ali, they were made prisoners, put on prison fare, and having nothing for food but milk and rice, upon this kind of diet they perfectly recovered from the disease with which they had formerly been affected. To the same purpose, Dr. Girdlestone observes, "that at the famine of Madras, in October 1782, several native children were taken by the English to their tables; on account of their extreme voracity, their viscera soon became diseased, their bellies tumefied, and scirrhous indurations were to be felt in all those who had not their diet limited." Intermittent fevers also have been mentioned among the exciting causes, as also cold applied to the body when warm, injuries in the region of the liver, extraneous substances inherent in its ducts, and contusions on the head.

DIAGNOSIS.

The diseases with which Hepatitis may be confounded are Peripneumonia, Pleuritis, Peritonitis, Gastritis, Dyspepsia, and Phthisis Pulmonalis.

I. Peripneumonia and Hepatitis mutually resemble each other, by pain of the chest, difficult breathing, and cough. The attentive practitioner, however, easily marks the difference; because in Hepatitis, the pain stretches to the top of the shoulder, and is often increased by pressure upon the region of the liver, dyspnoea and cough are less urgent, and the countenance always has a certain yellowness. But in peripneumonia, the face is rather red and tumid. Moreover, the tumor of the liver may, in many cases, be felt by the hand below the ribs of the right hypochondrium. The stethoscopic signs which characterize peripneumonia, are also of great service in the diagnosis ; these are in the first stage of that disease the crepitating rale in the affected part of the lung, and puerile respiration in the parts in the vicinity that are still sound, and in the second and third stages, defect of the respiratory murmur, together with dulness of the thorax on percussion.

II. Hepatitis not unfrequently imitates the symptoms of Pleuritis, as pain of the side, cough, and impeded respiration. In pleuritis, however, the signs of disturbance of the organs of respiration precede the febrile reaction, while in Hepatitis they do not appear until it is fully established, and in Hepatitis the patient may usually take in a full inspiration, provided it be done cautiously, without exciting cough, which can scarcely be done in pleuritis. By means of the stethoscope, also, pleuritis is found to be distinguished in the first stage by egophony, and subsequently there is dulness on percussion, and distinct enlargement of the intercostal spaces.

III. Peritonitis. As the peritoneal coat is the seat in part at least of acute Hepatitis, the distinction can only be accurately drawn between it and peritonitis by a reference to the symptoms which indicate disturbance of the functions of the liver, such as a deranged action of the bowels changing the natural colour of the dejections, and also the colour of the skin and eyes becoming yellow.

IV. Gastritis. In this disease the pain at the scrobiculus cordis and vomiting are very different from the symptoms peculiar to Hepatitis, for there is no pain at the top of the shoulder, and also many of the other symptoms of Hepatitis are absent, while the strength is more suddenly weakened, and vomiting takes place more instantaneously ; the tongue is also usually red, and the pulse hard and sharp.

V. Dyspepsia has many symptoms like to those of chronic Hepatitis. But, by accurate attention they may be distinguished. For instituting a diagnosis, the history and progress of the disease, the habit of the body, the nature of the country, whether cold or hot, contribute much. But the pain in the region of the liver increased on pressure, the skin and colour of the eyes verging to yellowness, with heat of the body and increased pulse, point out the distinction between the two diseases.

VI. In Phthisis Pulmonalis, the hectic fever, dry cough, with great prostration of strength, and the pains in the chest, are certainly similar to the symptoms of chronic Hepatitis. But, in the advanced stages, the symptoms of the one from the other are very dissimilar. In Hepatitis the face and the eyes vary from a pale to a yellow, the tongue is yellow, sordid, often darkish ; in phthisis the eyes are whitish and the skin delicate, tongue clean and humid, and the expectoration purulent. But we should here also resort to the stethoscopic method of diagnosis, which shews phthisis to be distinguished by deficiency of the respiratory murmur in the upper part of the thorax, by the mucous and cavernous rales, and by pectoriloquy ; there is also dulness on percussion.

PROGNOSIS.

That we may be better able to make a prognosis respecting the event of the disease, we ought attentively to consider the nature of the symptoms, whether they are mild or severe, the duration and cause of the disease, the age and strength of the patient, and the effects of the medicines administered. If the symptoms from the commencement are slight, or at least mitigated by proper remedies, resolution in a short time is to be expected. When the remedies applied, although they may have diminished the vehement symptoms, yet have been unable entirely to repel the disease, the symptoms which shew the languid circulation of the blood, and the strength of the body broken down by the disease will be manifest ; in this state there is danger from the acute inflammation passing into the chronic, which may end in scirrhus of the liver, or perhaps in dropsy ; and unless the most powerful remedies be promptly administered, death will soon be the consequence. If pains in the region of the liver have been severe, together with a full frequent pulse, great heat, rigors, thirst, and constipated bowels, suppuration is to be apprehended, which is indicated by the remission of pain, and the evening accession of fever. If the patient's strength still keeps up,and the abscess is so situated that the pus makes its way through the parietes of the abdomen outward, or by adhesions with the intestines is passed with the faeces, then we ought not to despair of recovery. But if the patient's strength has been much broken by living in warm countries, or by the abuse of spirituous liquors, and if the abscess has broken into the cavity of the abdomen, if cold sweats, cold extremities, great debility, and singultus ensue, then we may be sure that death is at hand.

TREATMENT OF ACUTE HEPATITIS.

In this as well as in all other inflammations, the remedies are to be adapted to the degree of the symptoms and the period of the disease. Accordingly, if the fever is great, pulse frequent and strong, heat and thirst very urgent, general bloodletting is necessary, proportionate to the fever and severity of pain; and if the inflammatory action is not subdued, and the symptoms are not abated, recourse must be had to the same operation. If this be neglected, there is a great danger of suppuration ensuing. After venesection, calomel combined with jalap or colocynth ought to be administered, and repeated every other day until the inflammatory symptoms subside. While copious and repeated bloodletting, proportioned to the age and strength of the patient, and also, violence of the disease, have been had recourse to, the antiphlogistic regimen must be strictly enforced from the commencement; hence the diet ought to be vegetable and of easy digestion, carefully avoiding all animal food and broths. The thirst is to be assuaged with cool drinks impregnated with vegetable acids. The intestines are to be kept open with gentle purgatives, such as small doses of the neutral salts, or jalap combined with the submuriate of mercury is to be given occasionally. In some cases a diaphoresis may be excited and kept up by small doses of the tartrate of antimony. If this method of treatment has been insisted on for four or five days, and if the violence of the disease is little abated, recourse must be had to mercury, given in small doses so as slightly to affect the system; for this purpose also rubbing in a small quantity of mercurial ointment in the neighbourhood of the part affected, until a slight salivation shall have taken place is often beneficial. In discussing the inflammation, and obviating any of the bad effects from the exhibition of mercury, solutions of the neutral salts in an infusion of senna may be taken every second or third morning, as also small doses of the mineral acids. If, however, the use of mercury in the mode just stated do not produce its proper effects, it may be advantageously combined with small doses of opium in the form of pill, or we may use the pilula hydrargyri, one or two at bedtime, as may be judged necessary. If the disease yields readily, a short course will suffice, but if not, its use must be persevered in for some time.

If, notwithstanding all our endeavours, the inflammation has a tendency to suppuration, we must promote the formation of proper pus, and the discharge of the abscess externally. To effect this purpose, recourse must be had to a more generous diet, wine, and the use of the sulphate of quinine, or cinchona in the form of powder or decoction. At the same time anodynes are to be taken for procuring sleep, and persisted in till the suppuration is completed. If the tumor points outwards, an emollient cataplasm should be applied, and when it becomes soft, it is to be opened with a lancet; if the pus makes its way into the intestines, gentle laxatives are often of the greatest use. Towards the end of the disease, tonics with stomachic bitters, wine, and a generous diet must be had recourse to.

TREATMENT OF CHRONIC HEPATITIS.

There is no remedy in the treatment of Chronic Hepatitis equal to mercury, which should be given in small doses and slowly, so as to keep up a copper taste in the mouth, as it promotes the secretion of bile, and excites the extreme vessels on the surface. To promote these effects a small portion of antimonial powder, or also of opium, may be added with great advantage; the peristaltic motion of the bowels ought to be kept up by colocynth pills, combined with calomel, to be given at bed-time, and in the morning neutral salts. Gentle exercise and flannel next the skin are very necessary. When there is local uneasiness, blisters may be used. General blood-letting is seldom, if ever, necessary, but in many cases topical is sometimes of very great service. Nitric acid diluted largely with water has been much praised, and, in scrofulous habits, may be of advantage, especially when combined with the muriatic acid, as so much recommended by Dr. Scott of Bombay. The diet best for patients labouring under chronic hepatitis is the attenuant, nutritive, and easy of digestion, avoiding salt meats, and greasy substances. By degrees it may be improved by the additions of broths and light animal food. The Bath waters and Cheltenham mineral waters have been much recommended. Laxatives are always necessary throughout the whole disease, without which, indeed, many of the other remedies are of no avail.

MORBID APPEARANCES.

The morbid changes which the liver from inflammation undergoes, seems to vary exceedingly, according as the disease is acute or chronic. In warm countries, as in the East or West Indies, the disease is more frequently found in the acute form, while in our country it much more often assumes the chronic. When a rapid termination in the acute form takes place, in the post mortem examination of the body the mass of the liver has been found more or less enlarged, especially in the right side, externally dark, or nearly black, and when cut into giving out a large quantity of very dark blood. In some cases, the black colour is only found on the surface, while the internal structure is healthy. In other cases the substance of the liver has been found much softened and broken down, and of a very black colour. Ramollissement, which takes place in many cases, consists of a broken down, friable, and softened state of a part of the substance of the liver, without any change of colour. In other cases, it is black, resembling a soft coagulum of venous blood, with a remarkable fœtor. Another state, called Encephaloid ramollissement, sometimes occurs, which very much resembles the substance of the brain, and is of a white pulpy consistence. In some acute cases the whole of the structure of the liver seems, as it were, marked by numerous small points, or centres of suppuration, while in other instances there are abscesses of considerable size, with all the usual characteristic appearances.

In chronic affection of the liver, simple enlargement is often found without any change of texture, often extending to the left hypochondrium, and filling the whole epigastric region. The late Dr. Gregory made mention of a liver nearly filling the upper part of the abdomen, and weighing eighteen pounds; as also, another liver so small that it could scarcely be felt, the weight of which did not exceed twenty ounces.

Various tubera are found both on the surface and also in the substance of this viscus. These tubera present externally a surface elevated into numerous irregular knobs, of a yellowish colour, from two to three inches diameter; internally, they exhibit a variety of texture, in some cases fibrous, in others tubercular, or cheesy. Sometimes the liver is remarkably indurated, and its texture cartilaginous, at other times greatly enlarged, and sometimes greatly diminished. Lastly, hydatids have been found in various parts of the liver, sometimes large, at other times small, and often in great numbers.

FINIS.